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A Comparison of the Educational Research Forum and Other Computer Networks

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Abstract

This article is a description of seven computer networks that currently exist for educators. The networks discussed are The Rural School House--a bulletin board operated by and for the Cheyenne Wells School District, Old Colorado City Electronic Cottage, Education 80, Special Net, CONFER, DIALOG/Knowledge Index, and the Educational Research Forum. Particular attention is given to the Educational Research Forum. Comparisons concern services provided, accessibility, text editing, humanization, guidance and documentation, control, forgiveness and recovery, responsiveness, cost, and additional features available. The networks differ primarily in the services that are provided, in accessibility, forgiveness, responsiveness, cost, and in additional features that are available.

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A Comparison of the Educational Research Forum and Other Computer Networks

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Computer-based education usually refers to software developed by or for students learning to read, write, solve problems, etc. But computer networks have introduced another interpretation. Students and teachers may use computer networks to search for information that has been written about a variety of topics, ranging from acquatic sciences to world textiles. Often, this information is more timely than articles in conventional journals, since computer networks generally have little or no process of editorial review. The reader is referred to Hiltz and Turoff (1) for a more complete description of computer networks.

Whether or not students and professionals know how to program, and whether or not they own their own microcomputers, they may engage in computerized dialogues with others with the following advantages: 1) the cost can be less than a long-distance phone call, 2) the exchange takes less time than the postal service, 3) each person takes part at a time and place convenient for the individual, 4) people have time to think through answers before responding, 5) rather than receiving information in chunks, as at conferences or seminars or through books, journals, etc., participants in established computer networks may receive a continuous stream of information that is relevant to their interests (2), and 6) exchanges can be recorded and reread later--as opposed to face-to-face discussions, which are reconstructed from memory later. A network can serve as an ongoing convention. Professionals can easily find out how others have solved problems that they share.

This article is a description of seven computer networks that currently exist for educators. The networks to be discussed are The Rural School House--a bulletin board operated by and for the Cheyenne Wells School District--Old Colorado City Electronic Cottage, Education 80, Special Net, CONFER, DIALOG/Knowledge Index, and the Educational Research Forum on CompuServe. Particular attention will be given to the Educational Research Forum, since the author is the System Operator of the Forum.

The Cheyenne Wells Rural School House (CW) is an example of a network developed for a local school system and the surrounding community. CW may be reached at 303/767-5533 evenings,

weekends, and other times when school is not in session. Among other things, local systems may be used for teachers' announcements and assignments, homework help for students developing software, and discussions between parents, teachers, and students about topics such as the time spent on video arcade games.

The Old Colorado City Electronic Cottage (OCC), at 303/632-3391, was developed in a clever, Old-West style. Messages, programs, and articles are organized according to topics including politics, computers, writing, and education. The education section is intended to be "a place for local teachers and students to meet with each others minds."

Education 80, at 203/629-4375, addresses issues concerning educational uses of microcomputers for parents and teachers. This network was developed particularly for people in and around Greenwich, Connecticut.

Special Net may be accessed on the Telenet telephone network. Telephone networks permit people to dial a local number in order to reach a computer network through a mainframe computer somewhere else in the country. Special Net is organized by the National Association of State Directors of Special Education for professionals who are interested in special education.

CONFER may be reached through the Telenet, Datapac, and Autonet telephone networks. It was developed at the University of Michigan. Messages are organized according to topics or "conferences" such as law, political science, or investments. Most of the messages sent and received by educators concern educational uses of microcomputers.

DIALOG/Knowledge Index (DIALOG/KI) can be accessed through the Telenet, Tymnet, and Uninet telephone networks. DIALOG and Knowledge Index are two divisions of the same service. They each have a wide selection of articles that may be read or printed for a fee.

The Educational Research Forum (the Forum) on CompuServe may be reached through the Telenet, Tymnet, or Datapac telephone networks or through CompuServe's own phone network. The Forum was started specifically for members of the Mid-Western Educational Research Association, but CompuServe is a nation-wide network, so the Forum attracts researchers from all over the country.

There are three basic parts of the Forum: a Conference area, Messages, and Databases. The real-time conference area is a typed equivalent of a CB conversation or phone call. Of the

sever networks listed, this area is unique to the Forum. While CW, OCC, and Education-80 all permit callers to talk with the System Operator, real-time conversations are limited to that private exchange. On the Forum, several different conversations may take place at the same time on different channels. People may monitor more than one conversation at once. Conversations between two or more people may be either public or private. Conversations may be recorded and stored in a database to be read at another time. This area can be used effectively for a question-answer exchange with a guest speaker who has submitted a paper to a database.

Messages may be brief announcements or requests for information, or they may be ongoing discussions of topics. On the Forum, they may be sent publicly or privately, and they may be addressed to all or directed to individuals. Messages are organized according to the following sections of the Forum:

0 Miscellaneous / Help

1 Mid-Western Educational Research Association

2 Educational Administration / Teacher Education

3 Curriculum and Instruction

4 Learning and Cognition

5 Statistics and Research Methodology

6 Human Development and Counseling

7 Special Education / Motivation

8 Education in the Medical Professions

9 Evaluation and Measurement

10 Directors of Research and Evaluation

Messages are submitted to one of these sections. Participants may read all public messages, they may read only the most recent messages within a certain section, or they may search for and read a thread of messages all pertaining to the same topic. Messages on the Forum may be up to 96 lines or 2500 characters long. Up to 384 messages may be stored at one time. Currently, when new ones are added, the oldest ones fall off into a "bit bucket." However, there are plans for archiving messages so that they will not be lost.

DIALOG/KI is the only network of the seven discussed here which does not currently support public and private messages. CW and OCC provide several commands for reading messages selectively. Special Net organizes bulletins and messages accordng to a variety of topics, including the following: Federal policy, Litigation, Employment opportunities, Upcoming conferences/training sessions, and Legal advice regarding policies. Other organizations, such as the American Council on Rural Special Education and Project Tech Mark pay Special Net for the ability to store bulletins and messages on the system.

CONFER has a large capacity for messages. Currently, there are over 700 "items" posted within a conference regarding uses of microcomputers in education. Each item may be up to 990 lines long, and each may have as many as 990 responses that are up to 1500 characters long. Items may be in the form of questionnaires or polls, they may be requests for information, or they may be articles by authors requesting feedback. While items are organized together by the people who post them, each participant who logs in to CONFER is able to reorganize the items in categories that reflect personal interests.

Databases provide long-term storage of programs or articles. On the Forum, the databases include unfinished articles by authors seeking feedback, transcripts of conferences, original computer programs, and data files of general interest to statisticians. Since one value of a computer network is the immediacy of dissemination of findings, the Forum does not have an extensive review process. Everything legitimate that is submitted is printed. The review process takes place through feedback that the author gets in messages or online conferences. Papers are organized according to the same sections as messages. Articles do not need to pertain to computers in any way. Authors retain their copyrights and are free to submit articles to traditional journals after they have appeared on the Forum. People may conduct keyword searches for articles within a section, and they can browse through abstracts of the articles. They may choose to read an article online. Alternatively, they could capture an article or program in a buffer and save it on a disk or tape. Some users opt to print out the article or program. Database files, like messages, can be typed offline ahead of time.

While all seven of the networks have databases, DIALOG/KI has focused primarily on this aspect of networking. Databases available through DIALOG include Exceptional Child Education

Resources, the National Information Center for Educational Materials, and the National Information Center for Special Education Materials. Databases accessable through the Knowledge Index include the Educational Resources Information Center (ERIC) and Psychological Abstracts. ERIC is also available through CompuServe.

EQUIPMENT NEEDED

All seven of the networks can be accessed through a terminal, a micro-computer, or a communicating word processor. It is also necessary to have a monitor and/or a printer if these are not built into the hardware. No matter what other hardware is used, it is necessary to have a modem, which translates "computerese" into "telephonese." Modems have their own terminal programs, but often it is possible to get more sophisticated programs for use with a micro-computer.

Comparison

Kerr and Hiltz (2) have described seven criteria judged most important for evaluating computer networks: accessibility, text editing, humanization, guidance and documentation, control, forgiveness and recovery, and responsiveness.

ACCESSIBILITY

Accessibility is the "knowledge and effort needed to gain access to a network." Three of the networks are very easy to access. Participants simply dial phone numbers to reach CW, Education-80, and OCC. The other systems are accessed through telephone networks and require ID's and/or passwords, so there are four to five additional steps required for each of them.

TEXT EDITING

Text editing means that after typing a message or bulletin, one has an opportunity to correct misspellings, add more to it, delete parts, even erase it. Text editing is available for all of the message systems, though for CONFER one needs a user's guide in order to know what commands may be used. Actually, it is generally more economical on all of the networks to write and edit a message offline and then send it online if the author has software that permits this.

HUMANIZATION

Humanization means that participants feel as if they are treated as intelligent human beings. To this end, their privacy is protected and English word commands are used. Each of the systems except DIALOG/KI currently has a private, electronic mail section. DIALOG/KI has plans for implementing this feature by 1985. CONFER and the Forum even permit a user to change the name of a message-sender, in order to participate anonymously.

Three of the systems--CONFER, DIALOG/KI, and Special Net, use full English words as commands. Education-80, OCC, CW, and the Forum use first-letter abbreviations for words. The most creative commands are on OCC, where one types S for School Bell of the Li'l Red Schoolhouse. The only system where the abbreviations may pose a problem is Education-80, which shows just a list of one-letter abbreviations after the first access, with no indication of what the letters stand for (though alert users may choose to see entire words again).

GUIDANCE AND DOCUMENTATION

Guidance and documentation may be provided online or off. Online, CW, Education-80, DIALOG/KI, Special Net, and the Forum all have commands that display instructions. CONFER, DIALOG/KI, the Forum, and Special Net have printed manuals that describe commands. If help is needed in determining what command to use, these four systems also permit the user to ask for help. In addition, DIALOG/KI and Special Net provide training for participants who want it.

CONTROL

Control means that network participants can determine how to spend their time on the system. For instance, a new user who decides to scan the membership list of CONFER will find that the list of hundreds of names and interests will scroll past for half an hour unless it is halted. All of the networks permit users to cancel a procedure.

FORGIVENESS

Forgiveness means that participants get a second chance before possibly making a mistake. OCC, CONFER, CW, and the Forum all have this feature. For instance, on the Forum, a command to abort a just-typed message is followed by the question, "Do you mean to abort?" Special Net warns people if they have typed a message but have failed to send it. During some procedures,

the Forum and CW will show the participants what they have just typed and ask, "Is this correct?"

RESPONSIVENESS

Responsiveness means that a system does not make someone waste time. In other words, 1) procedures are performed immediately, without pausing several seconds or minutes, and 2) people who are familiar with a network can choose to dispense with menus. On the more heavily used networks--CONFER, Special Net, DIALOG/KI, and CompuServe--people may encounter longer delays than on the other networks. An ERIC search via Knowledge Index may take as long as one or one and a half minutes, depending on the number of keywords entered in the search. Users of networks which offer lower rates at nighttime, such as Special Net, CONFER and CompuServe, may experience delays of 30 seconds or longer during periods of heavy use.

All of the networks except DIALOG/KI are menu-driven, meaning users choose among options on menus. But on all of these systems, skilled participants may elect to skip the menus. Actually, on Education-80, people are automatically moved to "expert" status on the second visit, though they can choose to see menus again (if they remember which command to use). CW has several levels of expert status. People may choose to see the first words of menu choices, abbreviated commands, or no prompts at all.

In addition to the comparisons recommended by Kerr and Hiltz (2), prospective participants are generally interested in the costs and additional features available on networks.

COST

Three of the networks, CW, OCC, and Education-80, are free to use, but involve long distance telephone calls. Special Net costs $200 per year, plus storage fees for bulletins, etc. left over 5 days on the system, plus on-line charges ($14/hour 7 a.m. to 6 p.m. weekdays, $7/hour early evening and daytime during weekends, and $4/hour 9 p.m. to 7 a.m.). DIALOG/KI charges for the telephone network used ($6 or $8/hour) and for on-line reading ($25 - $70/hour) or offline printing of information (10 cents to 20 cents per educational record). CONFER charges $6/hour for online use of the system during the day ($5/hour at night) plus about $6/hour for telephone access.

For terminal programs that transmit and receive information at a rate of 30 characters per second, (the most common rate) CompuServe charges $12.75/hour for online use during weekdays ($6.25/hour evenings, weekends, and holidays). These rates are reduced for educational institutions. There is also a charge of $10/hour for non-CompuServe telephone access during weekdays ($2/hour evenings, weekends, and holidays). Access through CompuServe telephone lines is free. While the telephone networks reach major cities, people who live a distance from a large city may also pay for a phone call to that city.

OTHER FEATURES AVAILABLE ON THE NETWORKS

Participants in all of the networks that support the exchange of messages discuss applications of microcomputers in education. But this is a major focus only on CONFER and on one of the bulletin boards of Special Net. The Educational Research Forum is one part of a larger computer network, CompuServe. Three other services available on CompuServe are the Education Forum, the Educational Product Information Exchange (EPIE), and EDLINE. Users of the Education Forum primarily address issues concerning educational uses of microcomputers. The main purpose of EPIE is the evaluation of educational software. Education-80 is the only other network of the seven discussed here which actively engages in assigning ratings to educational software. EDLINE may be accessed through CompuServe or through another commercial network, the Source, for an additional charge of $150 to $175 per year. EDLINEs features current educational news, information about federal policies, and a keyword search for results of the National Assessment of Educational Progress. In addition, EDLINE supports bulletin boards of groups such as the Council of Chief State School Officers, the American Association of School Administrators, the Association of Educational Communication and Technology, and the National Institute of Education.

Besides the four services mentioned, CompuServe has hundreds of other bulletin boards and databases, most of which are not specifically related to education. After visiting the Educational Research Forum, people may scan headlines of late-breaking news, catch sports results, check on Dow Jones activity, reserve airline tickets, order a stereo, or participate in other Forums considering issues including medicine, the environment, cooking, and writing.

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2. E. B. Kerr, Computer-mediated Communication Systems: Status and Evaluation, Academic Press, New York, New York, 1982.

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